

# Environmental Product Declaration

## AutoStrada® AS-2 & AS-3

Private Office Workstation



AutoStrada storage-anchored planning defines workspace boundaries with the elegance of fine casegoods, and the utility and logic of a panel system. Refining the aesthetic of previous panel-based office furniture, AS-2 provides a more architectural appearance, using storage cabinets, shelved medians and worksurface bridges to surround and support individual workstations.

AS-3 offers the AutoStrada aesthetic for wall-based applications, integrating freestanding and wall-anchored storage, desks, and tables. With casework-quality detailing and exquisite finish options, AS-3 brings distinction and elegance to any private office.

### Recycled Content

1% Post-consumer recycled content

43% Post-industrial recycled content

### Functional Unit

The functional unit is one square meter (1m<sup>2</sup>) of workspace for a period of 10 years.

As AutoStrada has an expected service life of over 10 years, one product is needed to fulfill the functional unit. The analysis was conducted for an AutoStrada open table desking system with veneer finish, chosen based on a typical rendering of the office system.

# Environmental Product Declaration

## AutoStrada® AS-2 & AS-3

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass.

LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

**Accuracy of Results:** EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact.

**Comparability:** EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.



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Environmental  
Product Declaration  
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<b>Program Operator</b>	NSF Certification
<b>Declaration Holder</b>	Knoll
<b>Declaration Number</b>	EPD10571
<b>Declared Product</b>	AutoStrada® Workstation AS-2 & AS-3
<b>Reference PCR</b>	NSF International-BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814
<b>Date of Issue</b>	December 13, 2017
<b>Period of Validity</b>	5 Years (Expiration: December 13, 2022)
<b>Contents of the Declaration</b>	Product definition and information about building physics Information about basic material and the material's origin Description of the products' manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications

**The PCR review was conducted by** PCR Review Panel  
Chair: Thomas P. Gloria  
ncss@nsf.org

**This declaration was independently verified in accordance with ISO14025 by NSF Certification, LLC**

INTERNAL

EXTERNAL

Tony Favilla, NSF Certification, LLC

**This life cycle assessment was independently verified in accordance with ISO14044 and the reference PCR by**

Thomas Gloria, Industrial Ecology Consultants

**This EPD conforms with ISO 21930-2007**

Date of last revision: March 2021

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# Environmental Product Declaration

## AutoStrada® AS-2 & AS-3

• Reference Product Description

Desking 1

Product Category

Occupants Supported  
by Product

2.02 m<sup>2</sup>

1.81 m<sup>2</sup>

.16 m<sup>3</sup>

Physical Floor Space  
Area

Worksurface Area

Volume of Storage

52.6 kg/m<sup>2</sup>

43%

1%

Product mass per 1m<sup>2</sup> of  
Work Space Area

Post-Industrial  
Recycled Content

Post-Consumer  
Recycled Content

L shaped workstation with panel walls  
and pedestal storage

Additional features

• Functional Unit

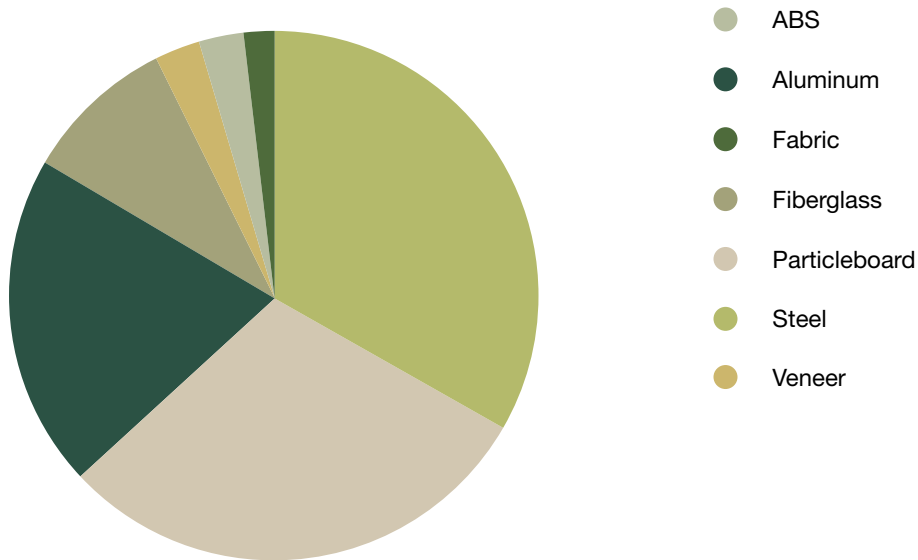
The functional unit is one square meter (1m<sup>2</sup>) of workspace for a period of 10 years. As AutoStrada has an expected service life of over 10 years, one product is needed to fulfill the functional unit. The analysis was conducted for an AutoStrada open table desking system with veneer finish, chosen based on a typical rendering of the office system.

1 square meter  
of workspace  
for a period of  
10 years

# Environmental Product Declaration

## AutoStrada® AS-2 & AS-3

• **Materials Composition**



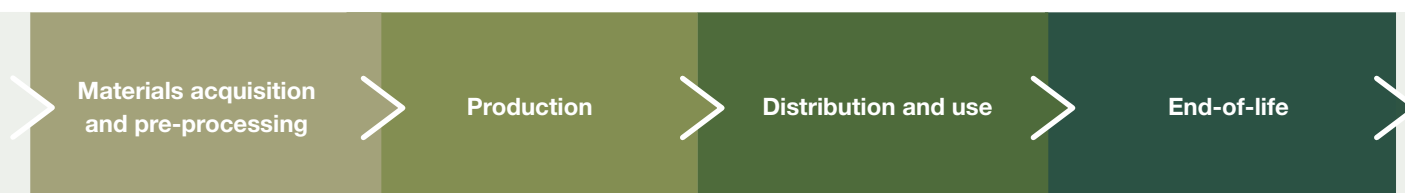
Material	% by mass	kg per m <sup>2</sup> floor space	kg. per workstation
ABS	2.71	1.43	2.88
Aluminum	20.3	10.7	21.6
Fabric	1.85	0.971	1.96
Fiberglass	9.18	4.83	9.74
Particleboard	30	15.8	31.8
Steel	33.2	17.5	35.2
Veneer	2.75	1.45	2.92
<b>Total</b>	100%	52.68	106.1

Total % may not equal 100% due to rounding errors

# Environmental Product Declaration

## AutoStrada® AS-2 & AS-3

- **Life Cycle Stages**



**A cradle-to-grave analysis was conducted for this EPD.** Materials acquisition and pre-processing starts when the material is extracted from nature and ends when the material in component form reaches the gate of the production facility or service delivery operation. As such, it includes transportation between upstream suppliers and Knoll's production facility.

The production stage is a gate-to-gate stage that starts with the product components entering the production facility and ends with the final product, packaged for shipment, leaving the facility. This stage includes manufacturing processes that take place at Knoll, along with the production of packaging materials.

Product distribution and storage are included in the next stage, along with product use and maintenance. This stage can include multiple legs of distribution and storage. The use stage begins when the consumer takes possession of the product, and includes assembly, installation, repair, and maintenance as appropriate. For products with electrical components, use stage electricity consumption is also considered.

The end-of-life stage starts when the product is ready for disposal and ends when the product is landfilled, returned to nature, or transformed to be recycled or reused. This stage includes transportation of the used product to treatment or recycling facilities and emissions associated with disposal.

### Life Cycle Assessment Results per functional unit (1m<sup>2</sup> of floorspace)

Inventory Metric	Units	Total
Net fresh water usage*	kg	1,577
<b>Primary energy demand, total</b>	<b>MJ</b>	<b>3,634</b>
Primary energy demand, renewable	MJ	1,253
Primary energy demand, non-renewable	MJ	2,380

# Environmental Product Declaration

## AutoStrada® AS-2 & AS-34

• **Life Cycle Assessment Results**

**Impact Assessment Categories**

Impact assessment results are calculated using the TRACI 2.1 methodology (Bare, 2012).

Global Warming Potential (100 yr)



Global Warming Potential (20 yr)



Acidification Potential



Eutrophication Potential



Ozone Depletion



Photochemical Ozone Creation Potential



● Materials Acquisition    ● Production    ● Distribution & Use    ● End of Life

**Life Cycle Assessment Results per functional unit (1m<sup>2</sup> of workspace)**

Impact Category	Units	Materials Acquisition	Production	Distribution & Use	End-of-Life	Total
Global warming potential (100 yr)	kg CO <sub>2</sub> eq.	114	35.8	25.12	33.8	<b>208</b>
Global warming potential (20 yr)	kg CO <sub>2</sub> eq.	128	39.7	60.93	96	<b>325</b>
Acidification potential	kg SO <sub>2</sub> eq.	0.487	0.109	0.04109	0.0403	<b>0.678</b>
Eutrophication potential	kg N eq.	0.0237	0.00522	0.00405	0.0125	<b>0.0455</b>
Ozone depletion	kg CFC-11 eq.	1.22E-006	1.97E-008	6.043E-011	8.1E-012	<b>1.24E-006</b>
Photochemical ozone creation potential	kg O <sub>3</sub> eq.	5.45	1.27	0.923	0.333	<b>7.97</b>

# Environmental Product Declaration

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### • References and Verification

**Bare, J. (2012).** *Tool for the Reduction and Assessment of Chemical and other Environmental Impacts - TRACI v2.1–User's Manual.* Washington, DC: U.S. EPA.

**Intergovernmental Panel on Climate Change.** (2013) IPCC Fifth Assessment Report.

**ISO. (2006).** ISO 14044: Environmental management–Life cycle assessment–Requirements and guidelines.

**ISO. (2009).** ISO 14040: Environmental management–Life cycle assessment–Principles and frameworks.

**ISO. (2011).** ISO 14025: Environmental labels and declarations–Type III environmental declarations–Principles and procedures.

**NSF International. (2015).** *BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814.*

**thinkstep. (2017).** *Office Furniture Workspace Products–Background LCA Report in Support of Environmental Product Declarations (EPD)–on behalf of Knoll.* Boston: thinkstep Inc.



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*This EPD was not written to support comparative assertions. EPDs based on different PCRs or different calculation models may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results due to and not limited to the practitioner's assumptions, the source of the data used in the study, and the software tool used to conduct the study.*